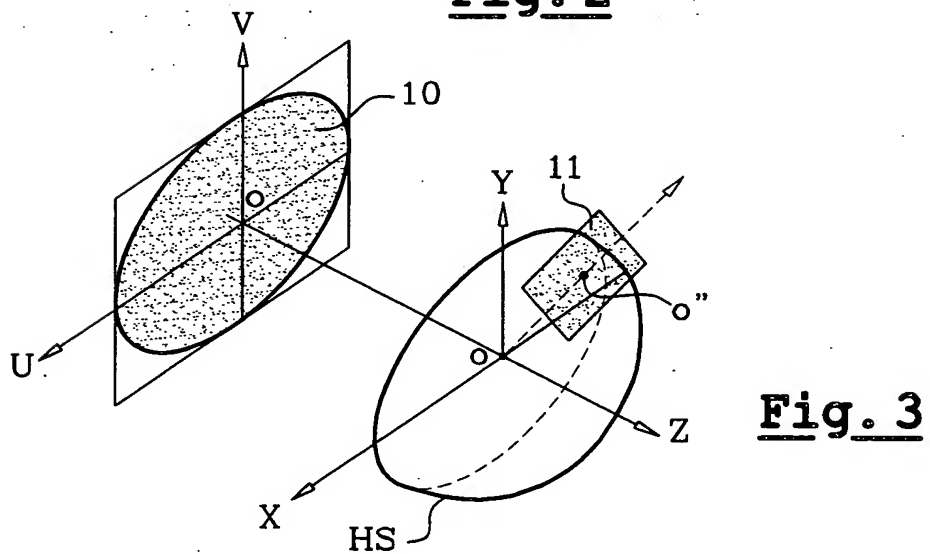
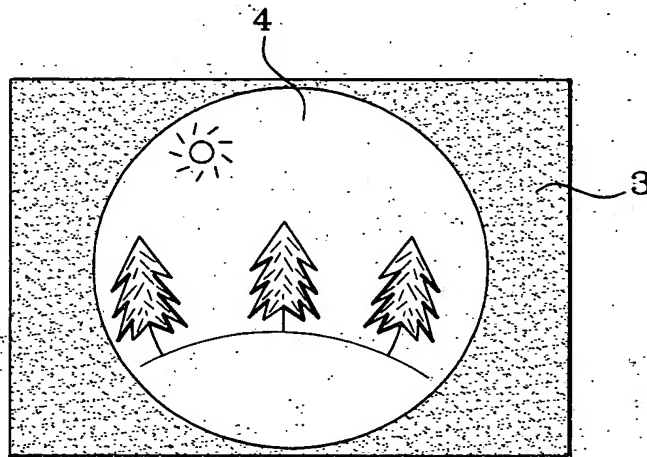
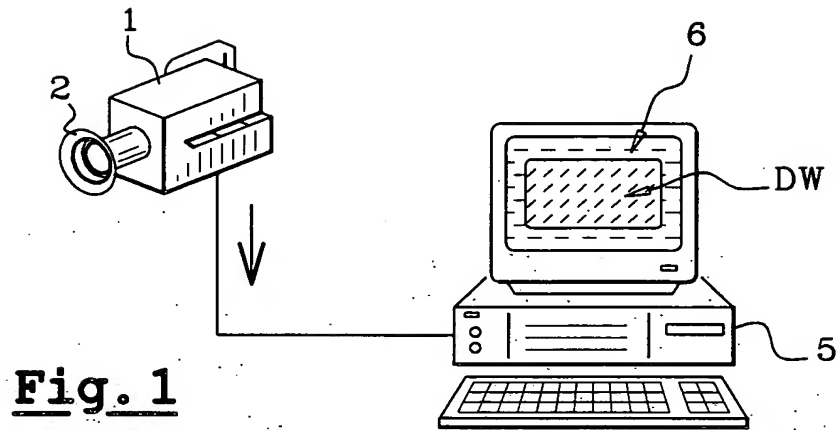
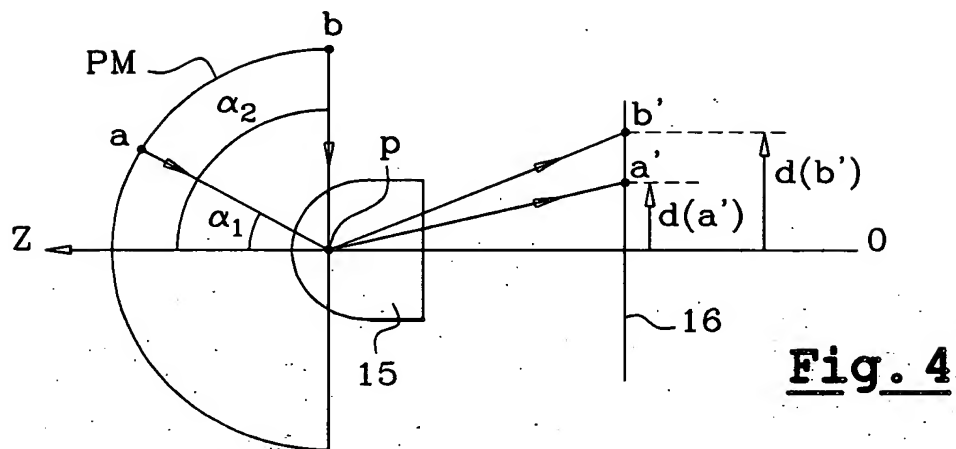


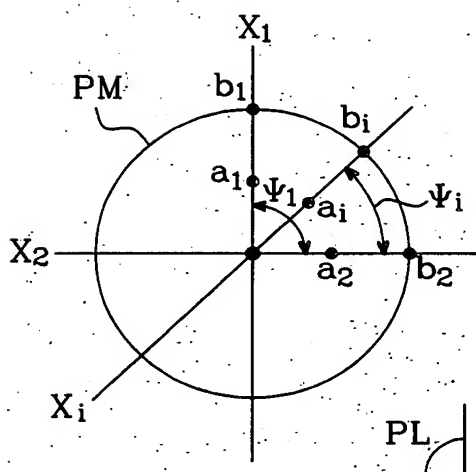
1 / 9



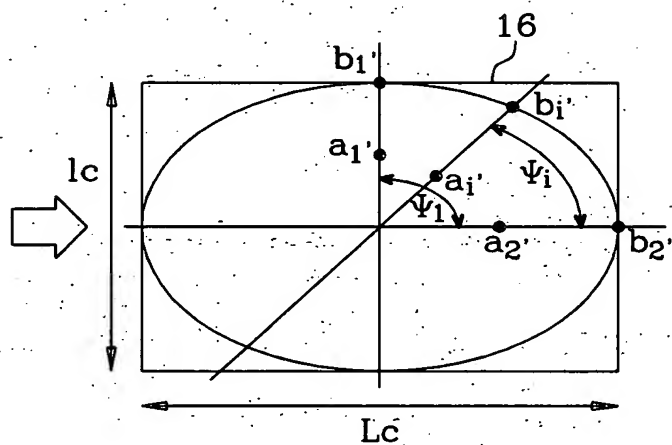
2/9



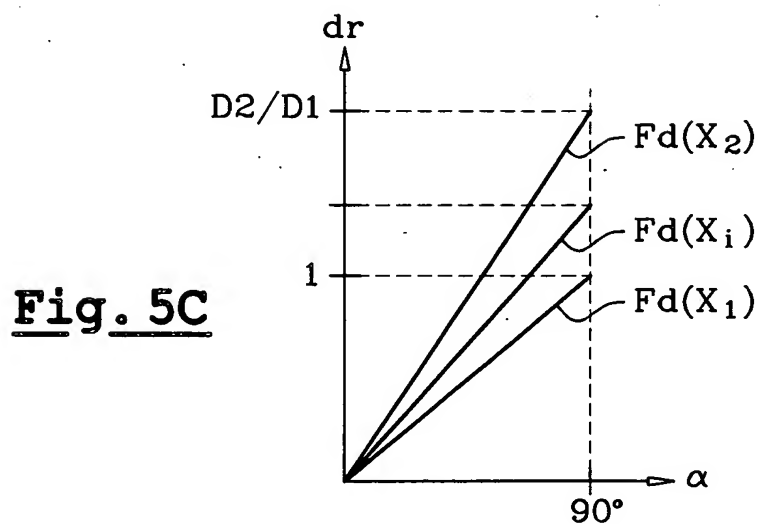
**Fig. 4**



**Fig. 5A**

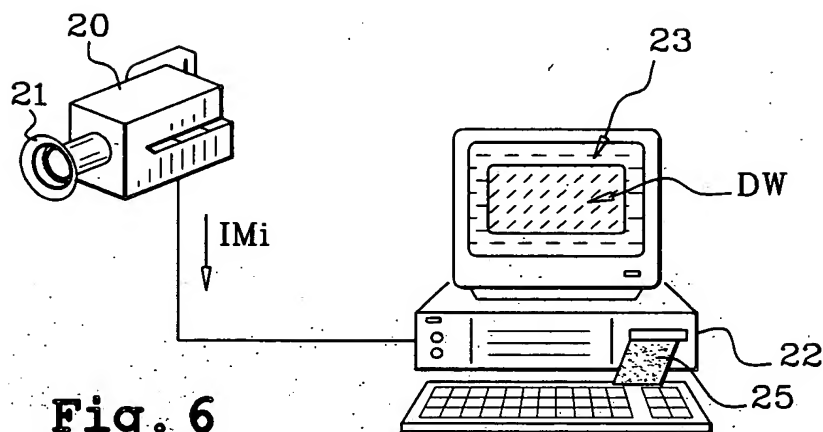


**Fig. 5B**



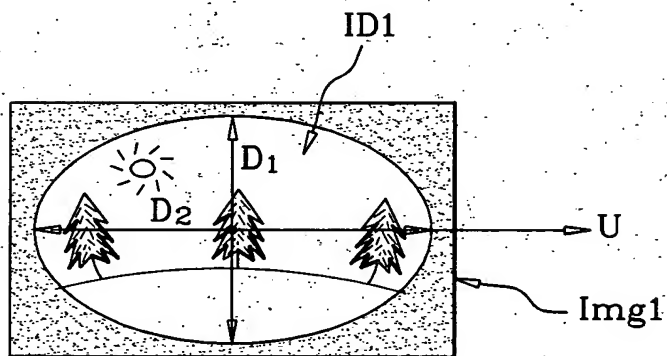
**Fig. 5C**

3/9

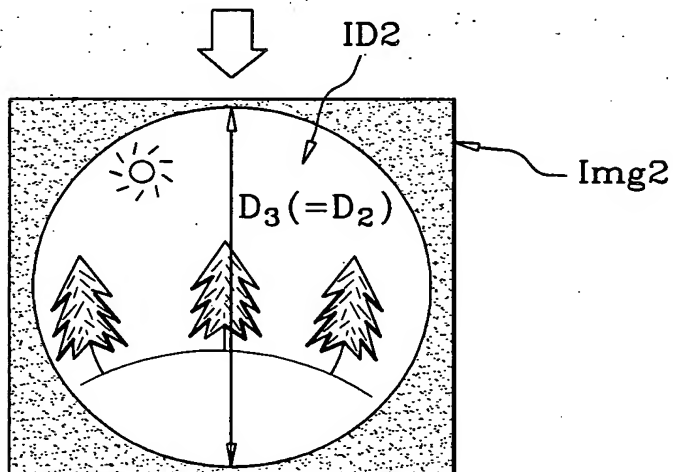


**Fig. 6**

**Fig. 7A**

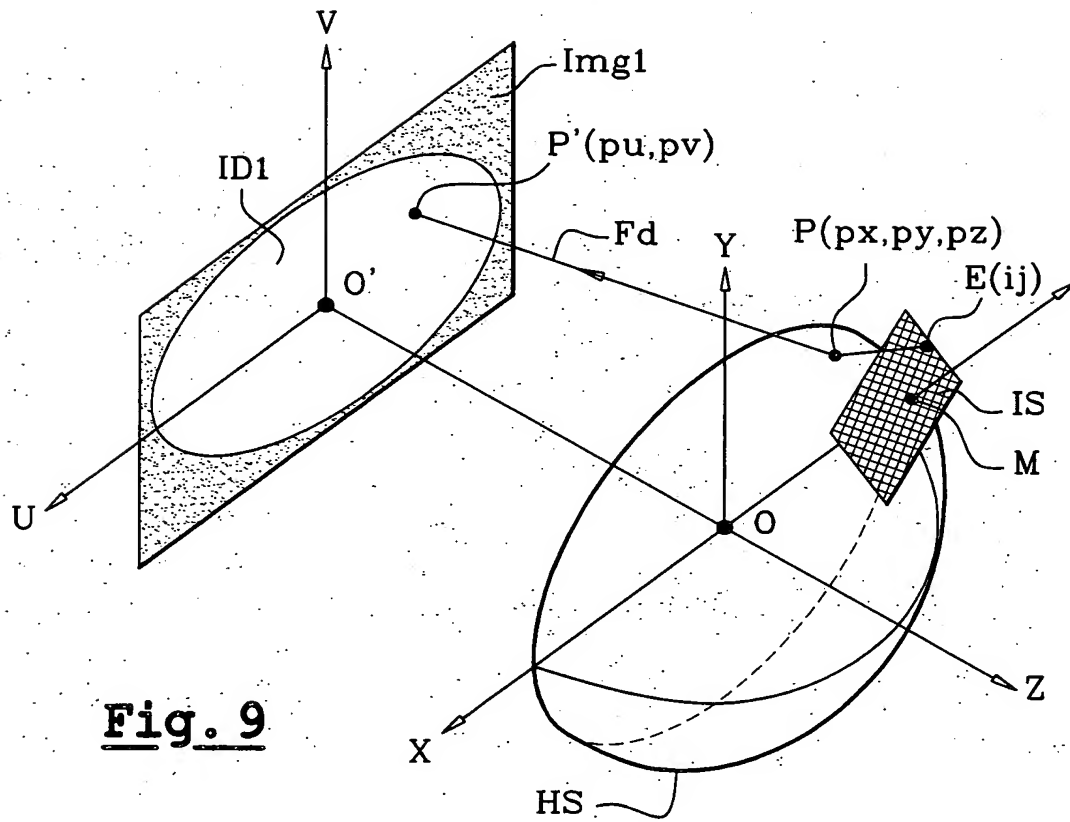


**Fig. 7B**



<p style="text-align: center;"><b>S1 – Acquisition</b></p> <ul style="list-style-type: none"><li>- Capturing a panoramic image by means of a still digital camera or a digital video camera equipped with a panoramic objective lens according to the present invention</li><li>    ? Obtaining an image ellipsoid (D1, D2)</li></ul>
<p style="text-align: center;"><b>S2 - Transfer of the image file into a computer</b></p> <ul style="list-style-type: none"><li>- Transfer of the image file of the image ellipsoid into a microcomputer,</li><li>- Storage in the auxiliary storage (optional)</li></ul>
<p style="text-align: center;"><b>S3 - Correction of the image ellipsoid</b></p> <ul style="list-style-type: none"><li>- Transfer of the image points of the image ellipsoid into a virtual image disk of radius D2 comprising more image points than an image disk of radius D1,</li><li>    ? Obtaining a classical image disk</li></ul>
<p style="text-align: center;"><b>S4 – Digitisation</b></p> <ul style="list-style-type: none"><li>- Transfer of the image points of the image disk into a system of axes OXYZ in spherical coordinates</li><li>    ? Obtaining a hemispherical panoramic image</li></ul>
<p style="text-align: center;"><b>S5 - Interactive display</b></p> <ul style="list-style-type: none"><li>- Determination of the image points of an image sector to be displayed</li><li>- Display of the image sector on a display window</li><li>- Detection of the user's actions on a screen pointer or any other control means,</li><li>- Detection of the user's actions on keys for image enlargement,</li><li>- Modification of the sector displayed (sliding the image sector displayed on the surface of the hemisphere and/or shrinking/expanding the image sector displayed)</li></ul>

5/9



**Fig. 9**

**S1 – Acquisition**

- Capturing a panoramic image by means of a still digital camera or a digital video camera equipped with a panoramic objective lens according to the present invention
- ? Obtaining an image ellipsoid

**S2 - Transfer of the image file into a computer**

- Transfer of the image file of the image ellipsoid into a microcomputer,
  - Storage in the auxiliary storage (optional)

**S3' – Interactive display with implicit correction of the distortions of the initial image**

A - Determination of the colour of the points  $E(i, j)$  of an image sector using the points  $P'(pu, pv)$  of the image ellipsoid:

- 1- Determination of the coordinates  $Ex, Ey, Ez$  in the coordinate system OXYZ of each point  $E(i, j)$  of the image sector,
- 2- Determination of the coordinates  $px, py, pz$  of points  $P(px, py, pz)$  corresponding to the points  $E(i, j)$  projected onto a hemisphere,
- 3- by means of the distribution function  $F_d$  of the objective lens, determination of the coordinates, in the coordinate system O'UV of the image ellipsoid, of the points  $P'(pu, pv)$  corresponding to the projection of the points  $P(px, py, pz)$  on the image ellipsoid,

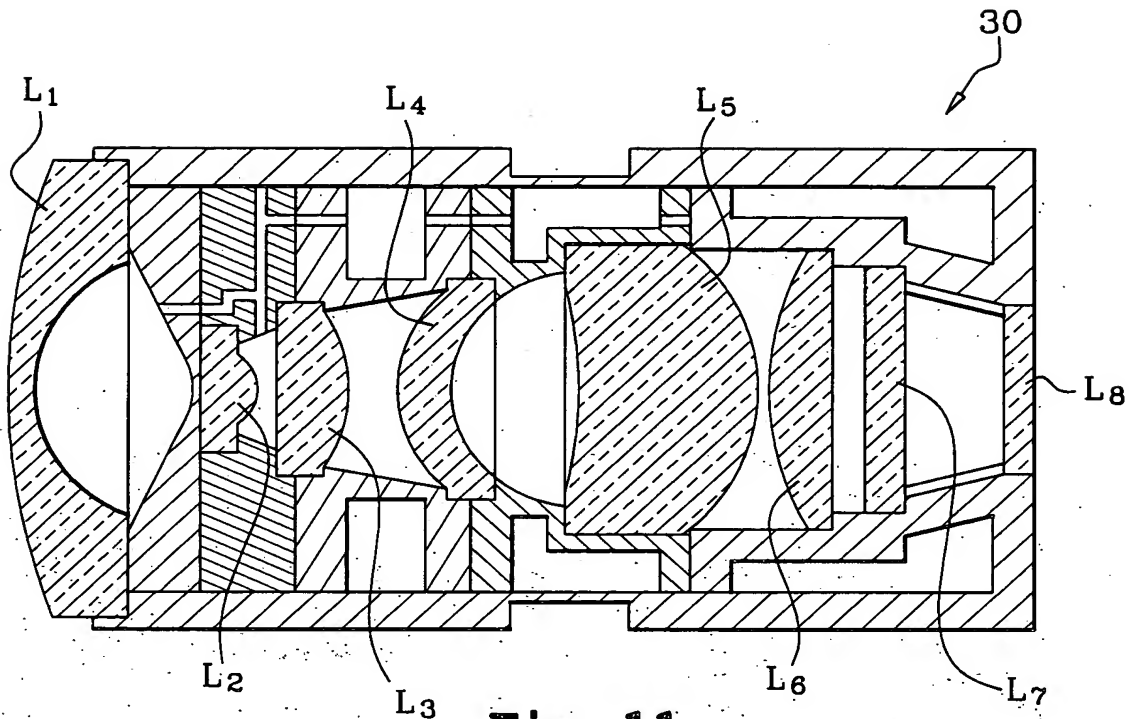
B - Presentation of the image sector in a display window

C - Detection of the user's actions on a screen pointer or any other control means

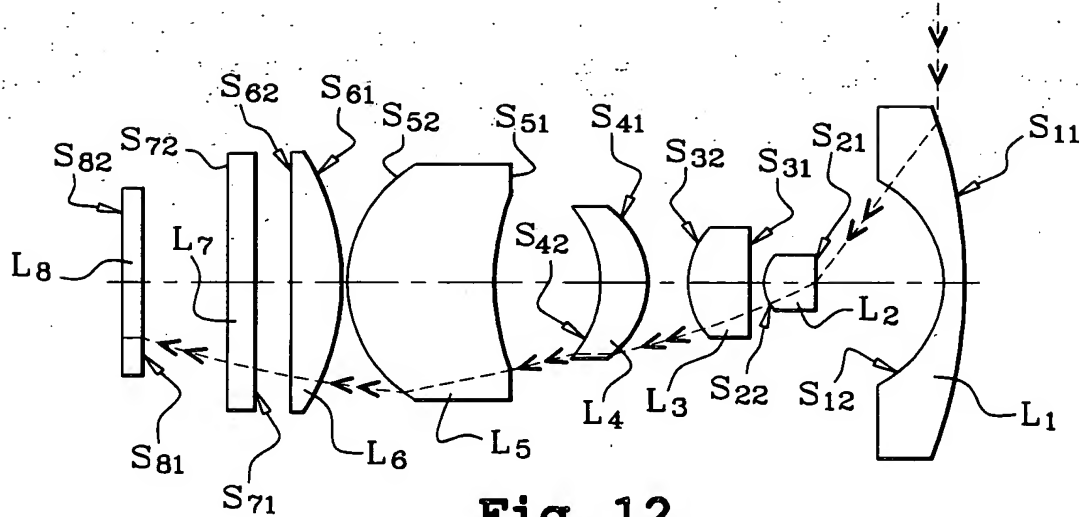
D - Detection of the user's actions on enlargement keys

E - Modification of the image sector displayed (moving and/or shrinking/expanding the image sector)

7/9



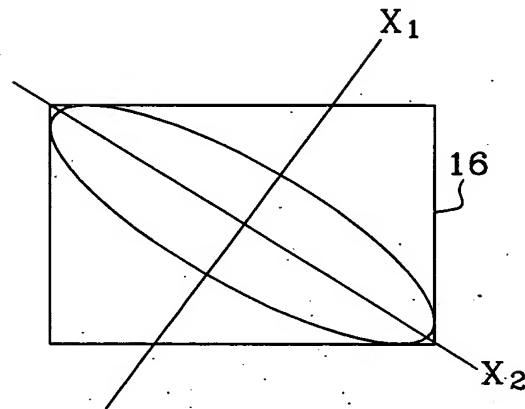
**Fig. 11**



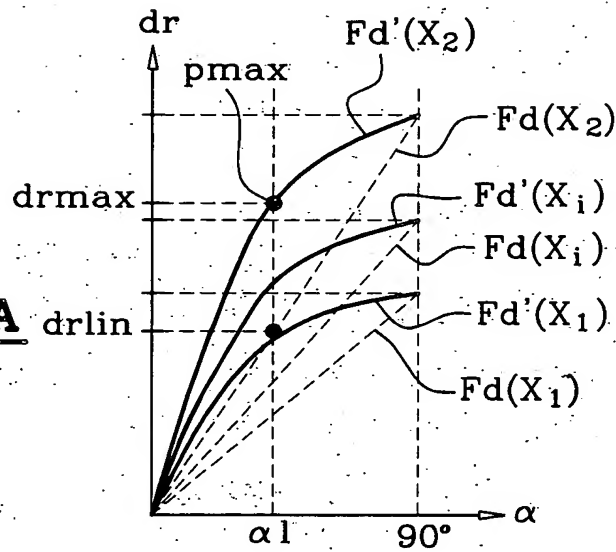
**Fig. 12**

8/9

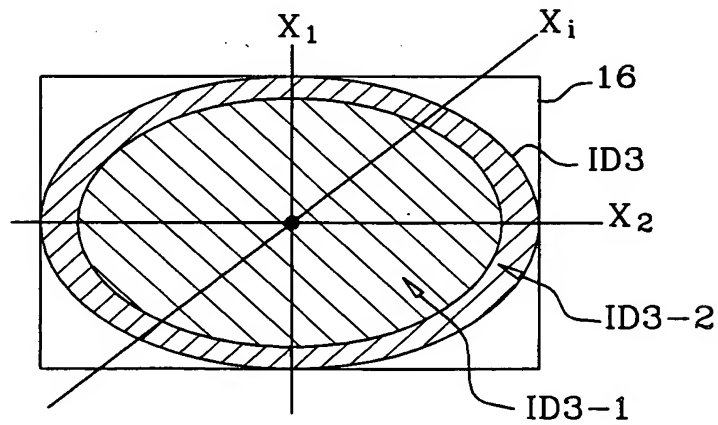
**Fig. 13**



**Fig. 14A**



**Fig. 14B**





9/9

**Fig. 15A**

